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# Causal Impact of Employee Work Perceptions on the Bottom Line of Organizations

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## Abstract

Perceptions of work conditions have proven to be important to the well-being of workers. However, customer loyalty, employee retention, revenue, sales, and profit are essential to the success of any business. It is known that these outcomes are correlated with employee attitudes and perceptions of work conditions, but the research into direction of causality has been inconclusive. Using a massive longitudinal database that included 2,178 business units in 10 large organizations, we found evidence supporting the causal impact of employee perceptions on these bottom-line measures; reverse causality of bottom-line measures on employee perceptions existed but was weaker. Managerial actions and practices can impact employee work conditions and employee perceptions of these conditions, thereby improving key outcomes at the organizational level. Perceptions of specific work conditions that engage employees in their work provide practical guidance in how best to manage people to obtain desired results.

## Keywords

employee perceptions, attitudes, engagement, satisfaction, customer loyalty, turnover, retention, business units, business outcomes, causality.

Approximately two thirds of the world's citizens age 15 or older are in the workforce (Gallup, 2010). On the basis of time allocation alone, with work occupying as much as one third to one fourth of total awake time for most working people, the connections between work and well-being are apparent. However, scientific studies also indicate that the quality of work conditions affects subjective well-being and health. For instance, research suggests that general attitudes toward work and mood at work spill over to mood after work (Judge & Ilies, 2004). Longitudinal research has revealed substantial relationships between attitudes at work and health outcomes such as coronary heart disease (Kivimäki et al., 2005; Nyberg, et al., 2009). In addition, general levels of satisfaction and having opportunities at work to do what one does best link to both evaluations of life and perceptions of daily experiences (including affect), after situational variables such as health, hours worked, income, marital status, education, and other demographics are controlled (Harter & Arora, 2009). Therefore, perceptions of work are important to the well-being of the people doing the work.

How important are employee perceptions of work conditions to the bottom line of employing organizations? Which elements can management leverage to best obtain

desired results? Research spanning more than 6 decades has looked at the relationship between employee work perceptions and performance, starting with the Hawthorne studies (Roethlisberger & Dickson, 1939). Most of this historical research has measured employee work perceptions through general questions about satisfaction with work or through the measurement of perceptions of specific facets of the job (supervision, coworkers, opportunities for advancement, etc.).

Early reviewers of published studies concluded there was little or no relationship between employee work perceptions (specifically referred to as *job satisfaction*) and performance (Brayfield & Crockett (1955). Petty, McGee, and Cavender (1984) and Iaffaldano and Muchinsky (1985) conducted two early meta-analyses on the employee perception–performance relationship. The measures of satisfaction combined studies of overall measures and measures of perceptions of specific work facets. After conducting their quantitative reviews, these

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investigators concluded there was no substantial relationship between employee work perceptions and performance. Research devoted to the employee perception–performance relationship waned, largely because of misinterpretation of the findings from these reviews. Although the effect sizes from these early studies were large enough to have practical relevance, they were routinely downplayed as trivial.

More recently, limitations in these early reviews were examined in a seminal article by Judge, Thoresen, Bono, and Patton (2001). Improvements in construct definition (using only overall and composite measures of multiple facets) and correction for measurement error resulted in population correlation estimates that are nearly twice as large as those reported earlier. The magnitude of the positive correlation between work perceptions and performance is substantial whether the correlation was based on objective measures or subjective ratings of performance, whether the design of the study was cross-sectional or longitudinal, across different levels of job complexity, and across different types of occupations. In their review, Judge et al. also described several possible theoretical explanations for the employee perception–performance relationship, including potential mediators and moderators. The vast majority of the historical studies examining the employee perception–performance relationship have been conducted at the individual level (studying individual measures of the variables). Still, with all of the attention and research that the employee perception–performance relationship has generated, the issue of causality is unsettled. Do employee perceptions of work-related conditions such as role clarity, appreciation for good work, and coworker relationships cause performance outcomes or is it the reverse?

A second line of research has more recently examined this relationship at the level of the business unit (i.e., retail outlets such as stores, bank branches, or hospitals). The perceptions of a group of employees within a functional business unit are aggregated and then correlated with the business unit's performance. As with prior individual-level research, meta-analyses have been conducted on studies at the business-unit level, and they have found positive relationships between employee work perceptions and outcomes such as sales, profit, employee retention, accidents, and customer loyalty (Harter, Schmidt, & Hayes, 2002; Harter, Schmidt, Killham, & Agrawal, 2009).

Schneider, Hanges, Smith, and Salvaggio (2003) investigated directionality of causal relations through longitudinal company-level correlations between various job satisfaction measures and financial performance of businesses. They found job satisfaction and some specific facets of satisfaction (i.e., security and pay) were predicted more strongly by organizational financial success than the reverse, with some evidence of reciprocal relationships. However, their sample size of businesses was small ( $N = 35$ ).

Schneider et al. (2003) stated that it is probably not reasonable to expect employee perceptions to directly influence financial performance. Having good working conditions probably does not improve the overall financial performance

of an organization unless it causes behaviors that in turn cause financial success. An engaging environment may stimulate employee discretionary actions that cause improvements in intermediate outcomes that then accumulate to eventually cause improved financial outcomes. Therefore, it is important to examine mediational processes. For instance, prior studies have not examined the possible mediating effects of employee turnover and customer perceptions of service quality in the relationship between employee work perceptions and organizational performance. The present study examines these mediational processes by combining longitudinal data across many different types of organizations.

## Theoretical Considerations

Ostroff (1992) hypothesized that employees do not work in isolation and that many positive outcomes that are achieved in organizations depend on how employees relate to one another (their coworkers and supervisors) and on the numerous short-term outcomes that then accumulate as a result. Perceptions of the work situation are influenced by the relationships workers have with others and the expectations they have of others. These relationships and expectations then increase constructive or destructive behavior within organizations. Employees are more likely to engage in discretionary activities that help an organization succeed if they see others engaging in similar activities (Kidwell, Mossholder, & Bennett, 1997). Totterdell (2000) suggested that groups develop collective mood through similarity of work group experience and emotional contagion. Evidence has also shown that job knowledge acquired through experience working with others increases performance outcomes (Berman, Down, & Hill, 2002; Huckman & Pisano, 2006).

Financial performance is best viewed as a downstream outcome that is influenced by variables in closer proximity to employee perceptions. Two such outcomes are employee turnover (a withdrawal behavior) and customer service quality (a performance behavior). If the causal path from employee perceptions to organizational performance is real, one would expect it to flow through the more direct outcomes of employee retention and service quality as perceived by customers.

Shaw, Delery, Jenkins, and Gupta (1998) found relationships between quality of human resource practices and turnover at the organizational level. Employee turnover can affect financial performance both through direct and indirect cost. The costs of turnover are nontrivial and represent substantial losses: the cost of hiring and training replacement employees, the cost of lost productivity prior to and after the employee leaves, and the impact on the productivity of coworkers. Most estimates of turnover costs range from one half to five times the employee's annual salary; thus, if a quarter of a business' workforce leaves each year, and the average pay is \$35,000, it could easily cost a 1,000-person firm \$4–\$10 million a year to replace employees. The U.S. Bureau of Labor Statistics reports an annual average voluntary turnover rate ranging from 15% to 25% for recent years (U.S. Department of Labor, 2008). Eighty percent of the turnover reasons given by departing employees in the U.S. working

population (18 years and older) are voluntary (Gallup, 2007). A high percentage of voluntary turnover reasons can be attributed to the quality of managing and perception of coworkers' effort (Gallup, 2007). Therefore, it is reasonable to hypothesize that employee perceptions of the work situation are a cause of turnover, which in turn partially mediates the relationship between perception of the work situation and financial performance.

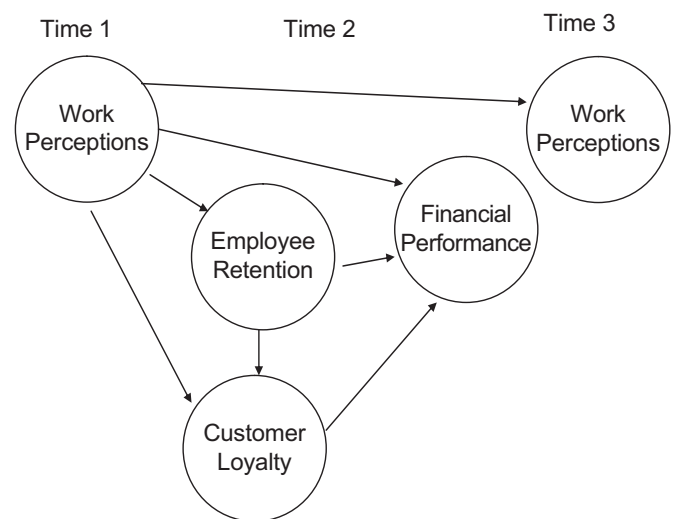
Employees with positive attitudes toward their workplace are likely to carry those attitudes over to customers and to engage in the discretionary effort it takes to serve customers at a high level. They are likely to extend themselves both through the interactions they have with customers (for customer-facing employees) and through the quality and consistency of the products they produce (if they are non-customer facing). Customer perceptions can impact financial performance directly through repeat business and word of mouth.

Numerous studies have shown positive relationships between favorable employee perceptions of the work situation and customer perceptions of service quality (Johnson, 1996; Reynierse & Harker, 1992; Schmit & Allscheid, 1995; Schneider, Ashworth, Higgs, & Carr, 1996; Schneider & Bowen, 1992; Schneider, Parkington, & Buxton, 1980; Ulrich, Halbrook, Meder, Stuchlik, & Thorpe, 1991). Others have shown substantial relationships between customer perceptions of service quality and financial outcomes (Fleming, 2000; Fleming, Coffman, & Harter, 2005). Customer service can vary substantially across business units within the same organization (e.g., different stores in a chain), and this variability explains differences in customer loyalty and repeat purchases (Fleming et al., 2005). When customers are better served, they are more likely to return to the service provider and subsequently spend more money. It is plausible that happy or disgruntled customers might affect the perceptions of employees (the reverse causal path). Our hypothesis is the former, but we test both theories in this study, pitting them against each other.

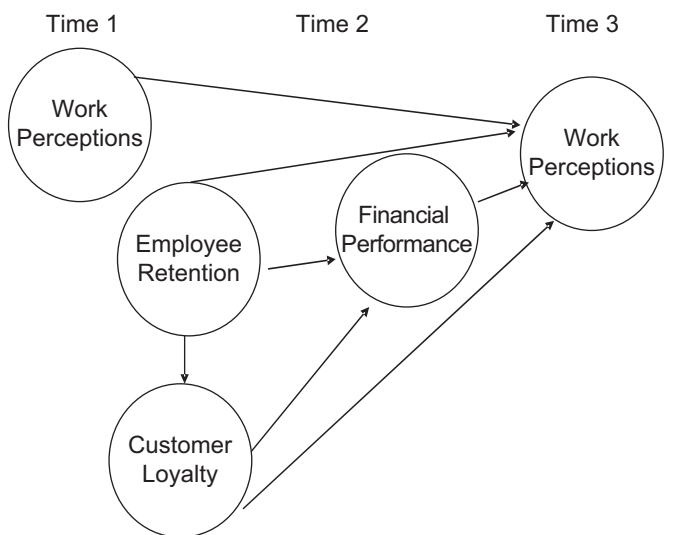
Given adequate sample sizes and corrections for measurement error, path analysis allows one to examine the consistency of different causal models (and their mediating processes) with longitudinal data (Billings & Wroten, 1978; Hunter & Gerbing, 1982). Meta-analysis, combined with longitudinal path analysis, circumvents the methodological limitations inherent in individual studies (Hunter & Schmidt, 2004).

Gallup, Inc. has maintained a growing database of responses to its instrument (described later), which measures employee perceptions of work characteristics that engage employees. This practical measure is designed to help managers take action to improve employee perceptions of the work situation. A subset of studies in this database contains employee survey data and measures of organizational outcomes over multiple time periods. For this data subset, we calculated longitudinal correlations for use in the present path analytic study, testing and comparing causal models that differ in hypothesized direction of causality for the relationship between employee work perceptions and business performance. These models are shown in Figures 1 and 2 and are discussed in detail later.

In the hypothesized causal model we propose (Fig. 1), employee work perceptions cause more proximal performance



**Fig. 1.** Causal model 1: Work perceptions cause business-unit performance.



**Fig. 2.** Causal model 2: Business-unit performance causes work perceptions.

outcomes, such as employee retention and customer loyalty, which in turn cause financial outcomes, such as sales and profit. A reciprocal relationship from financial outcomes to employee work perceptions is also possible. It is likely that work perceptions predict the performance of the organization, but it is also likely that as organizations improve performance, they reinvest more in their employees, causing more favorable perceptions of work (Schneider et al., 2003). For example, more successful organizations may provide higher pay, better benefits, and greater job security, all of which may make general attitudes more positive. Financial success may also enable the organization to invest in assets or programs that impact specific working conditions (better materials and equipment, recognition programs, additional training and learning opportunities, etc.). This

is an example of a nonrecursive model, that is, a model with one or more circular causal chains (feedback loops). Nonrecursive causal models are difficult to test with data from only one time period but can be evaluated using longitudinal data (Billings & Wroten, 1978; Hunter & Gerbing, 1982). The data in the present study make it possible to test our proposed model (Fig. 1) and contrast its fit to the data with an alternative model postulating a different (opposite) direction of causality (Fig. 2). We see this reciprocal relationship as an important cycle that should be expected in healthy organizations, but we hypothesize that the causal relationship from employee work perceptions to financial outcomes is stronger than the reverse effect. In testing this hypothesized causal process, one can compare the longitudinal path of Time 1 work perceptions to Time 2 outcomes with the path of Time 2 outcomes to Time 3 work perceptions. Our prediction is that the former path coefficient will be larger than the latter path coefficient. In addition, we predict that the overall model postulating that employee work perceptions cause business outcomes will fit the data better than the model that postulates the opposite causal direction. This result is to be expected if the causal effect is stronger in the perceptions-to-outcomes direction than in the reverse direction.

## Method

### Description of the Data

This study includes a total of 2,178 business units of varying types from 10 companies in six industries. Each study (representing a single company) included multiple business units, employee survey data from multiple time periods, and outcome data from at least one separate time period for each business unit. Employee survey responses were aggregated across respondents within each business unit, and each business unit's score on our primary variable (work perceptions) was the average across 12 items measuring perceptions of work characteristics or conditions (Items Q01–Q12 in the Appendix). We also calculated each business unit's score on each of 13 items (each of 12 working conditions and overall satisfaction). The variability of employee survey scores across business units was the same for both years in which data were collected. Time periods varied by organization, with 3 companies providing quarterly performance data, 3 companies providing semiannual performance data, and 4 companies providing annual performance data.

Because employee survey data were collected at one point in time (typically over a 2- to 3-week period in a given company), business-unit performance data were aggregated to represent the period in time following the first employee survey and preceding the second employee survey. For 8 of 10 companies, employee surveys were conducted on an annual basis, and for the remaining 2, on a semiannual basis. For instance, if the employee survey was conducted on a semiannual basis, the performance data were collected for the 6-month period following the first survey and preceding the second survey. For the 8 companies conducting annual surveys, the methodology

**Table 1.** Number of Organizations, Business Units, and Respondents by Industry Type (Longitudinal Data)

Industry	Organizations	Business units	Respondents
Health care	1	162	10,530
Financial	1	610	7,812
Manufacturing	2	76	17,300
Retail—merchandise	3	688	61,866
Retail—food	2	542	37,920
Transportation	1	100	6,472
Total	10	2,178	141,900

varied slightly. Three studies correlated Time 1 survey results to Time 2 annual performance and Time 2 annual performance to Time 3 survey results. Three studies used the 6 months of performance data following the Time 1 employee survey and the 6 months of performance data preceding the Time 3 employee survey. Two studies used the quarter following the Time 1 employee survey and the quarter preceding the Time 3 employee survey. In the selection of studies for this meta-analysis, each company was represented once, and all available studies were included (obviating the possibility of publication or availability bias). For 6 organizations in this analysis, multiple longitudinal studies were conducted. When multiple longitudinal analyses were available for the same organization, we averaged the correlations for the various time series across studies so that one entry was made for each analysis type (Time 1 to Time 2; Time 2 to Time 3) for each organization. Therefore, the estimates of correlation for 6 of the 10 companies were more precise than would be the case had these companies had only one longitudinal analysis. Table 1 shows the number of companies, business units, and respondents by industry category. Table 2 shows the types of business units included in the meta-analyses. The data show a considerable range in industry and type of business unit represented; business units ranged from retail stores to manufacturing plants to hospitals to sales offices.

### Independent-Variable Measure

The primary independent variable measure used in this study is the Gallup Q12 Instrument, described in detail in Harter et al. (2002). The instrument is composed of 12 items (see the Appendix), measuring antecedents to (causes of) personal job satisfaction and other affective constructs (measured on a 1–5 agreement scale), and one overall satisfaction item (satisfaction with the overall organization, measured on a 1–5 satisfaction scale). Each of the 12 items measures perceptions of work characteristics that can be improved by the action of managers. The actionable nature of these employee work conditions makes them different from the items contained in measures of the more general and affective construct of job satisfaction (Harter et al., 2002). However, the composite of the 12 items correlates highly with affective states such as job satisfaction, commitment, and engagement (Harter et al., 2009; Harter & Schmidt,



**Table 2.** Number of Business Units and Respondents by Type of Business Unit (Longitudinal Data)

Business-unit type	Organizations	Business units	Respondents
Branch	1	610	7,812
Hospital	1	162	10,530
Plant	1	60	17,243
Region	1	100	6,472
Restaurant	1	228	18,267
Sales team	1	16	57
Store	4	1,002	81,519
Total	10	2,178	141,900

2008). Average test–retest reliability of Q12 scores aggregated at the business-unit level is .80; this figure shows that there are reliable differences between business units in mean Q12 scores and provides quantitative justification for aggregation of Q12 scores within business units to produce a score for each business unit (Klein & Kozlowski, 2000; this business-unit-level reliability is equivalent to an interclass correlation based on the average number of respondents across business units). Qualitative justification for aggregation rests on the fact that respondents for whom aggregation takes place are all working within the same business unit and hence are all reporting observations on conditions in that same unit. Cronbach's alpha computed at the business-unit level is .91; this value is larger than the test–retest reliability primarily because of the absence of a time interval in the calculation of alpha. However, as is the case with the test–retest reliability, the alpha reliability supports the conclusion that scores show highly reliable differences between business units and therefore that aggregation within business units is appropriate (Klein & Kozlowski, 2000). Although it is conceptually clear that the Q12 measures multiple facets (role clarity, feeling appreciated, coworker relationships, etc.), factor analyses indicate that Q12 scores are unidimensional at the business-unit level; that is, the instrument is dominated by a single, large general factor (as is usually the case with measures of job-related employee attitudes, particularly when aggregated at the unit level). When the Q12 is administered in participating organizations, an attempt is made to obtain census surveys; the median participation rate is 83%.

### Dependent-Variable Measures

Dependent-variable measures used in this study were obtained directly from representatives of the organizations whose employees were surveyed. All correlations were computed across business units separately within each company and then averaged across companies via meta-analysis. Hence, differences in modes of measurement across companies do not affect the results—as would be the case if the data were pooled across companies and correlations were computed on the pooled data.

### Employee Retention

Employee retention data were available for 888 business units from five companies. The retention measure was the annualized percentage of employee retention (retention rate) for each business unit (including both voluntary and involuntary turnover—reverse scored as retention).

### Customer Loyalty

Customer loyalty data were used to represent overall customer perceptions of service quality and available for six companies and 1,120 business units. Customer loyalty measures varied slightly by company but included, in all cases, measures of customer advocacy for the business unit measured (likelihood to recommend, likelihood to repurchase, and satisfaction). The customer loyalty metric in each case was an average of the items included in each survey, aggregated across customers sampled.

### Financial Performance

Financial data were of two types, business-unit sales (revenue) and margin (percent profit of total revenue). In many organizations, location-specific variables influence ability to compare financials across business units. Location variables often include the age of the business unit, the local market (including competitor proximity and density), and population base. Such variables can influence the success of a business unit. In such cases, organizations typically use targets (i.e., budgets, plans, quotas, or prior year's performance) as a method of more accurate comparison. When appropriate, these measures (differences from targets, goals, or quotas) were used as the financial outcome variables in computing the within-company correlations. When business units were determined (by review of researchers and organizational representatives) to be comparable on financial variables, the raw figures were used. To the extent possible, then, we controlled for location in the analyses. Because sales and profit are highly correlated, we used an equally weighted composite of sales and profits as our financial performance measure.

We first meta-analyzed the bivariate relationships between employee work perceptions at Time 1 and outcomes at Time 2; next, we meta-analyzed the relation between outcomes at Time 2 and perceptions of working conditions at Time 3; and finally, we meta-analyzed the interrelationship among the outcome variables. The resulting meta-analytic bivariate correlations are then used in a path analysis to test and contrast the causal directionality predictions of our hypothesized causal model (Fig. 1) and the alternative causal model (Fig. 2).

The steps in the data analysis were as follows:

1. Calculate the correlation of Time 1 work perceptions with Time 2 employee retention, Time 2 customer loyalty, and

**Table 3.** Meta-Analysis Results for Longitudinal Correlations

Analysis	WPI to ER2	ER2 to WP3	WPI to CL2	CL2 to WP3	WPI to Sales2	Sales2 to WP3	WPI to Prof2	Prof2 to WP3
No. of business units	883	888	1,120	1,087	1,481	1,509	1,534	1,581
No. of rs	5	5	6	6	7	7	8	8
Mean observed <i>r</i>	.16	.03	.22	.11	.18	.14	.11	.08
Observed SD	.05	.03	.05	.10	.12	.11	.06	.05
$\rho$	.26	.06	.31	.14	.22	.17	.13	.10
SD $\rho$	.00	.00	.00	.07	.12	.10	.00	.00
95% CI	.15 to .35	-.04 to .15	.23 to .38	.07 to .23	.16 to .28	.11 to .23	.07 to .19	.04 to .15

Note. WPI = work perceptions measured at Time 1; ER2 = employee retention measured at Time 2; WP3 = work perceptions measured at Time 3; CL2 = customer loyalty measured at Time 2; Sales2 = sales measured at Time 2; Prof2 = profit measured at Time 2;  $\rho$  = true-score correlation corrected for independent and dependent variable measurement error; 95% CI = 95% confidence interval of true correlation.

Time 2 financial performance (sales and profit) for each study (organization) and calculate the correlations of Time 2 outcomes (employee retention, customer loyalty, and financial performance) with Time 3 employee work perceptions.

- Calculate the intercorrelations among the performance variables (at Time 2) for each study (organization).
- Conduct meta-analyses across studies (organizations) of each of the bivariate correlations in Steps 1 and 2.
- Assemble a meta-analytic correlation matrix using the correlations from each meta-analysis.
- Apply path analysis to this correlation matrix to test the fit of the models specified in Figures 1 and 2.
- Evaluate the fit of each model using the chi-square statistic and the standardized root-mean-squared residuals (SRMRs).
- Interpret the magnitude and direction of the path coefficients in each model to determine the extent to which they support our two hypotheses.

These processes were followed for all independent variables studied (the composite of work perceptions, each of the 12 working conditions, and overall satisfaction).

### Meta-Analytic Methods

Each correlation in the matrix of correlations was estimated via meta-analysis and was the weighted average correlation across organizations, appropriately corrected for measurement error. The weights used were the number of business units (which is the sample size for these correlations). The meta-analysis methods were those of Hunter and Schmidt (2004), as implemented by Schmidt and Le's (2004) program for artifact distribution meta-analysis. Relations among dependent variables (business-unit performance measures) were all calculated within the same time period (Time 2), making it possible to calculate path coefficients based on the full intercorrelation matrix of variables in the study.

The meta-analysis corrected for sampling and measurement error. Because we did not have range-restriction estimates for the performance variables (which were measured on different scales across companies), we did not correct for range

restriction, which means that the estimates of correlations presented here may be somewhat lower than would be expected in the population of all business units. Therefore, our results should be viewed as representative of the relationships between the variables within the average company, rather than those that would be obtained in a data population pooled across companies. (For further discussion of this distinction, see Harter et al., 2002.) The specific calculational procedure was the interactive procedure for artifact distribution meta-analysis (Hunter & Schmidt, 2004, chap. 4; Law, Schmidt, & Hunter, 1994; Schmidt & Le, 2004). Test-retest reliabilities for both independent and dependent variables included in this study have previously been reported (Harter et al., 2002) and were again used in this study. (The mean values are shown in Table 5.) They were calculated on the basis of three time periods for each variable and were computed at the business-unit level.

### Path Analysis

Using the meta-analytic correlation matrix described earlier, we tested the two proposed models using PATH (Hunter & Hamilton, 1992), a least-squares path analysis program that provides path coefficients corrected for measurement error and standard errors of the path coefficients. In calculating standard errors, we conservatively used the minimum sample size observed across all of the bivariate relationships ( $N = 883$ ). Each of the two proposed models was tested for fit using the chi-square statistic and SRMR, as recommended by Billings and Wroten (1978). Hu and Bentler (1999) recommended SRMR as a fit index and have found it to be the index most sensitive to simple model misspecification. They recommended a cutoff value of .08 or less as indicating adequate fit. Kline (1998) recommended a cutoff value of .10 or less. Fit indices were compared between the two models.

### Results

Table 3 provides the meta-analytic results for each of the longitudinal relationships studied. On the basis of both observed and corrected correlations, work perceptions are a stronger

**Table 4.** Meta-Analysis Results for Performance Measure Intercorrelations

Analysis	ER2 to CL2	ER2 to Sales2	ER2 to Profit2	CL2 to Sales2	CL2 to Profit2	Sales2 to Profit2
No. of business units	2,614	2,418	3,443	1,809	2,994	2,501
No. of rs	16	13	18	14	18	14
Mean observed <i>r</i>	.22	.15	.17	.12	.15	.67
Observed SD	.08	.14	.13	.16	.13	.25
$\rho$	.38	.22	.25	.16	.20	.76
SD $\rho$	.00	.18	.15	.17	.14	.27
95% CI	.31 to .44	.16 to .28	.20 to .30	.10 to .22	.15 to .24	.74 to .79

Note. ER2 = employee retention measured at Time 2; CL2 = customer loyalty measured at Time 2; Sales2 = sales measured at Time 2; Profit2 = profit measured at Time 2;  $\rho$  = true-score correlation corrected for independent and dependent variable measurement error; 95% CI = 95% confidence interval of true correlation.

**Table 5.** Meta-Analytic Correlation Matrix

Variable	1	2	3	4	5
1. WPI	.80				
2. ER2	.26	.52			
3. CL2	.31	.38	.66		
4. FIN2	.19	.26	.19	.93	
5. WP3	.63 <sup>a</sup>	.06	.14	.14	.80

Note. All correlations are corrected for test-retest reliability; test-retest reliabilities are shown on the diagonal. WPI = work perceptions measured at Time 1; ER2 = employee retention measured at Time 2; CL2 = customer loyalty measured at Time 2; FIN2 = financial performance (equally weighted composite of sales and profit) measured at Time 2; WP3 = work perceptions measured at Time 3.

<sup>a</sup> From Harter et al. (2003). All other correlations are from Tables 3 and 4.

predictor of customer loyalty, employee retention, sales, and profit than the reverse. This finding was most generalizable for the relationships of work perceptions to customer loyalty and employee retention, which are theoretically more direct outcomes of work perceptions; for these relationships, the corrected standard deviation of the correlations is zero, meaning the result is highly generalizable across the organizations studied. After we corrected for measurement error in both variables, the longitudinal correlation of work perceptions at Time 1 to customer loyalty at Time 2 is .31. The reverse relationship (of customer loyalty at Time 2 to work perceptions at Time 3) is .14. For work perceptions to employee retention, the longitudinal correlations are .26 and .06, respectively. For sales, the longitudinal correlations are .22 and .17, and for profit, they are .13 and .10, respectively. This pattern of longitudinal correlations is consistent with the existence of a partially reciprocal relationship, with the impact of work perceptions on customer loyalty, employee retention, sales, and profit being greater than the reverse causal effects.

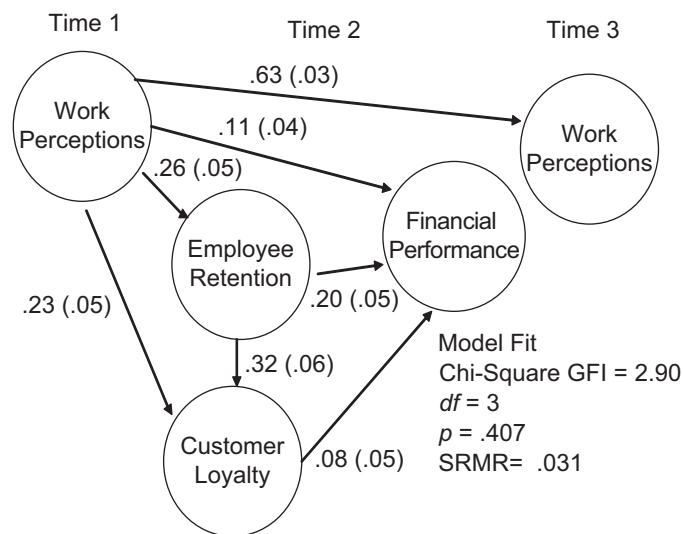
Table 4 presents meta-analyses of the concurrent relationships among the four criterion variables. Among the meta-analytic true-score relationships, the relationship was highest between sales and profit (.76), although the magnitude of this relationship varies by organization, SD  $\rho$  (the standard deviation of the true score correlation) = .27. Among the non-financial variables, the relationship was strongest between

employee retention and customer loyalty (.38), and this relationship does not appear to vary across organizations. Employee retention was positively related to both financial variables, and customer loyalty was positively related to both financial variables. These relationships varied somewhat in magnitude across companies.

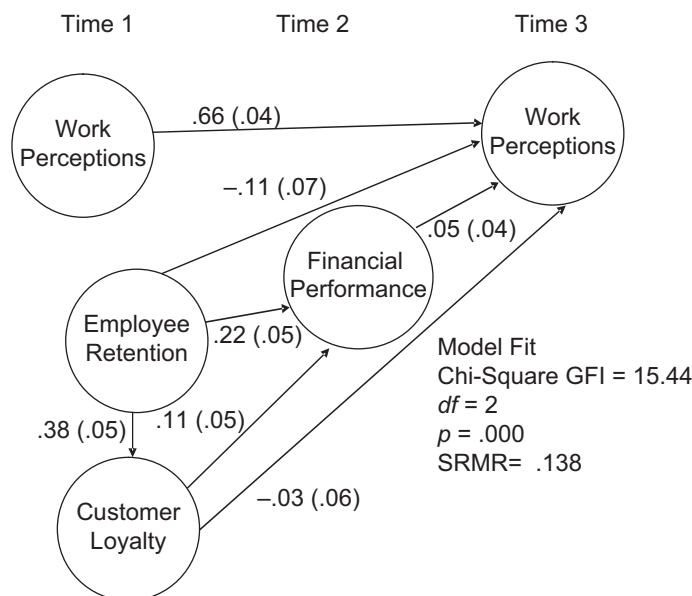
Table 5 presents the correlation matrix consisting of the true-score correlations from the meta-analyses. As indicated earlier, the variable financial performance is the equally weighted sum of the sales and profit variables. The correlation of Time 1 work perceptions to Time 3 work perceptions was taken from previous test-retest studies on the Q12 metric (Harter, Schmidt, & Killham, 2003); all other correlations are from Tables 3 and 4. The correlation between work perceptions at Time 1 and Time 3 is lower than the test-retest reliability because of the extended time gap between the former (from Time 1 to Time 3, rather than Time 1 to Time 2).

Path analysis was applied to the correlations in Table 5 to test the two competing causal models presented in Figures 1 and 2. Results are shown in Figure 3 for Model 1 and in Figure 4 for Model 2. Model 1 postulates that work perceptions cause business-unit performance. Model 1 shows a good fit to the data, with a nonsignificant chi-square value (2.90,  $p = .407$ ; SRMR = .031). Model 2 postulates that business-unit performance causes work perceptions; this model (Fig. 4) shows a poorer fit, with a significant chi-square value (15.44,  $p < .001$ ; SRMR = .138).





**Fig. 3.** Causal model 1: Work Perceptions cause business-unit performance. Standard errors of path coefficients are shown in parentheses. GFI = goodness of fit index; SRMR = standardized root-mean-squared residual.



**Fig. 4.** Causal model 2: Business-unit performance causes work perceptions. Standard errors of path coefficients are shown in parentheses. GFI = goodness of fit index; SRMR = standardized root-mean-squared residual.

Missing-link analysis revealed that there were no significant nonhypothesized links in Model 1 and two significant nonhypothesized links for variables in Model 2 (from work perceptions at Time 1 to customer loyalty at Time 2 and from work perceptions at Time 1 to financial performance at Time 2). Hence, Model 1 shows a better overall fit to the data.

In Model 1 (Fig. 3), the path from work perceptions at Time 1 to employee retention at Time 2 is .26, and in Model 2 (Fig. 4), the reversed path (from employee retention at Time 2

to work perceptions at Time 3 is actually negative (-.11). This result is likely explained by a pattern seen in prior studies in which newer employees (within the first 6 months) tend to be more engaged than long-term employees (Brim, 2002), suggesting that as turnover increases (retention decreases), more new employees will enter a business unit through rehiring, and these newer employees will be more engaged during their honeymoon period.

In Model 1 (Fig. 3), the path from work perceptions at Time 1 to customer loyalty at Time 2 is .23, and in Model 2 (Fig. 4), the reverse path is essentially zero (-.03). In Model 1, the path from work perceptions at Time 1 to financial performance at Time 2 is .11, and in Model 2, the reverse path is .05. Again, the path from work perceptions to the performance measure is larger than the reverse path. However, these two paths taken together are consistent with a possible partial reciprocal relationship between work perceptions and financial performance. These data suggest that the impact of work perceptions on financial performance is about twice as large as the impact of financial performance on work perceptions (.11 vs. .05).

We repeated these same analyses for each of the 12 working-conditions items and overall satisfaction. Table 6 provides a summary of the path coefficients and standard errors for each of the causal paths studied for each item and SRMRs for each model for each causal analysis.

First, in assessing the path coefficients for the overall satisfaction item, the paths are clearly stronger from satisfaction to employee retention and customer loyalty than the reverse paths. These results are consistent with what we observed for the composite of working conditions (work perceptions). However, the directional arrow from financial performance to overall satisfaction (.12) is just as strong as the path from satisfaction to financial performance (.11), which suggests a stronger reciprocal relationship from financial performance to the general attitude of satisfaction than we observed with the working-conditions composite (.12 vs. .05).

Reviewing each of the 12 working conditions separately, we found both generally consistent patterns across the items and some differences. Model 1 (postulating that work perceptions cause performance) fit the data better than Model 2 (performance causes work perceptions) across all items. Across items, the causal arrow appears stronger from work perceptions to employee retention and customer loyalty than the reverse. As with the composite working-conditions variable, for 10 of the 12 items, the path coefficient was positive for work perception (Time 1) to employee retention (Time 2) but negative for the reverse path. As noted, this result is likely due to the honeymoon effect of newer employees having higher engagement. This pattern was not observed for the “best friend at work” and “progress discussion” items (Q10 and Q11). For these items, the causal direction was consistent (stronger from work perception to employee retention than the reverse), but the path from employee retention to work perception was slightly positive. This result is likely because newer employees in a business unit are less likely to have had their progress discussed in the previous 6 months and are less likely to have formed close

**Table 6.** Summary of Standardized Path Coefficients for Overall Satisfaction, Work Conditions Composite, and Each Work Condition Item (Q12)

Variable	Employee retention		Customer loyalty		Financial performance		Model fit	
	WPI to ER2	ER2 to WP3	WPI to CL2	CL2 to WP3	WPI to FIN2	FIN2 to WP3	SRMR Model 1 <sup>a</sup>	SRMR Model 2 <sup>a</sup>
Overall satisfaction	.32	-.13	.24	.08	.11	.12	0.034	0.145
Work conditions composite <sup>b</sup>	.26	-.11	.23	-.03	.11	.05	0.031	0.138
Q01. Know what is expected	.28	-.17	.25	.13	.07	.03	0.034	0.134
Q02. Materials and equipment	.32	-.12	.30	.09	.06	.07	0.026	0.156
Q03. Opportunity to do best	.28	-.23	.19	.12	.27	.16	0.051	0.149
Q04. Recognition	.20	-.22	.09	.05	.06	.05	0.049	0.084
Q05. Someone cares	.17	-.12	.19	-.01	.06	.06	0.029	0.092
Q06. Development	.18	-.18	.22	.04	.10	.08	0.038	0.107
Q07. Opinions count	.22	-.16	.16	-.01	.08	.06	0.039	0.107
Q08. Mission-purpose	.18	-.08	.29	-.05	.10	.05	0.026	0.133
Q09. Coworkers committed	.26	-.15	.29	-.03	.09	.05	0.038	0.150
Q10. Best friend	.30	.02	.11	.05	.04	-.01	0.011	0.110
Q11. Progress discussion	.18	.08	.30	-.07	.13	.01	0.018	0.133
Q12. Learn and Grow	.24	-.23	.23	.05	.13	.03	0.050	0.137
SE <sup>c</sup>	.06	.08	.06	.07	.05	.05		

Note. Full wording of the overall satisfaction item and Q01–Q12 are provided in the Appendix. WPI = work perceptions at Time 1; ER2 = employee retention at Time 2; WP3 = work perceptions at Time 3; CL2 = customer loyalty at Time 2; FIN2 = financial performance at Time 2; SRMR = standardized root-mean-squared residual.

<sup>a</sup> For Model 1, see Figure 1; for Model 2, see Figure 2.

<sup>b</sup> Also displayed in Figures 3 and 4.

<sup>c</sup> Standard errors varied slightly (within .01) for path coefficients within each column. Those presented are maximum values for each column.

friendships in their short tenure. Thus, business units with higher retention at Time 1 are likely to have more friendships and progress discussions in the previous 6 months.

Similar to the general satisfaction item, some of the working-conditions (Q12) items demonstrated similar paths from work perception to financial performance in comparison to the reverse. Those with strongest evidence of reciprocal causation were Q02 (“materials and equipment”), Q04 (“recognition and praise”), and Q05 (“someone cares about me”). The strongest causal path from work perception to financial performance (.27) was observed for Q03 (“opportunity to do best”), and this item also exhibited a strong reciprocal path (.16), even though the predictive path was substantially stronger. As such, although work perceptions appeared to be more the cause than consequence of financial performance, improved financial performance also appears to cause more positive perceptions of materials and equipment, having a chance to do what you do best, and feeling recognized and cared about.

## Discussion

Meta-analyses have established that there is a positive relationship between employee perceptions of the work situation and organizational outcomes (Harter et al., 2002), but the direction of causality has not been clear. Harter et al. (2002) stated that

future research should focus on the question of direction of causality and should do so on the basis of a variety of different kinds of causally relevant evidence (i.e., a multimethod approach). One type of such evidence is provided by path analysis of time-series data. The present study expands on earlier work by using longitudinal data and path analyses of meta-analytically determined relationships over time to pit opposing causal models against each other. For longitudinal analyses to provide a credible means of causal inference, they must be based on large data sets, take into account mediating variables through path analysis, and include correction for biases induced by measurement error. The present study meets all these requirements.

The relationships observed in this meta-analysis provide evidence that employee work perceptions predict important organizational outcomes and that, in general, the causal path goes from employee perceptions to outcomes more strongly than the reverse, particularly in regard to the theoretically more proximal outcomes of employee retention and customer loyalty. In the case of financial performance and employee perceptions, our results indicate partially reciprocal relations. However, note that this reciprocal relationship seems to be specific to global satisfaction with one's organization, perception of adequate materials and equipment, having a chance to do what one does best, feeling recognized, and feeling cared

about. The finding of a reciprocal relationship between satisfaction and financial performance is consistent with findings reported by Schneider et al. (2003), possibly indicating that business units with more satisfied employees engage in discretionary activities that may benefit the organization but also that financial success may reinforce satisfaction by leading to better pay, benefits, and job security. The reciprocal nature of the relationship between some working conditions and financial performance suggests that as business units have more employees who have the right materials and equipment to do their work, are in jobs that best fit their talents, feel recognized and cared about, they are more likely to perform in ways that complement the financial goals of the organization. In addition, when business units have more financial success, they can likely invest in the right materials and equipment and hire enough staff to allow employees to specialize in areas that fit their talents. Conversely, when the financial situation is bad, organizations may be forced to cut back on materials, equipment, and staff, and there may be greater need for employees to perform multiple roles, thus causing more negative perceptions of those specific elements.

Harter et al. (2002, 2009; Harter, Schmidt, Killham, & Asplund, 2006) suggested that the observed relationships would indicate substantial utility in relation to profitability, sales, turnover, and customer loyalty under the assumption that employee work perceptions cause business outcomes. This study confirms this direction of causality. For example, Harter et al. (2002) estimated that business units in the top quartile on engagement conditions realize from 1 to 4 percentage points higher profit and 25% to 50% lower turnover than those in the bottom quartile (see utility analysis in Harter et al., 2002, p. 274; Harter et al., 2009, p. 25). These differences are important and nontrivial in most organizations. The hypothesis that the financial results emerge in part through the direct impact of employee work perceptions on employee retention and customer loyalty, among other mediators, is supported in this study. In fact, the relationship between employee work perceptions and the two direct outcomes was largely unidirectional.

### **Limitations of This Study and Future Research Needs**

Although the present data set is diverse (in terms of industry and business-unit type), there may be merit in extending this study. The relationships between employee work perceptions and the performance variables were widely generalizable (consistent with Harter et al., 2002), but the relationships among the performance variables (although in the same direction across organizations) often appeared to vary in magnitude. That is, SD  $\rho$  was sometimes fairly large. It is possible that generalizability statistics are influenced by second-order sampling error (Hunter & Schmidt, 2004, chap. 9). However, if the individual company's dependent-variable intercorrelations really do vary substantially from the mean values reported here, it may have some unknown effect on the path coefficients

for individual companies. It is possible that some of these differences, if real, could be explained as industry effects. However, the more important relationships are those between work perceptions and the business-unit performance outcomes, and these relationships appear to be quite consistent across organizations.

A universal limitation of studies of this sort is the fact that it is not known whether the time intervals used are those that are theoretically appropriate—because virtually no social science theories are precise enough to specify how much time is required for the postulated causes to have their effects. We judge that in this study the intervals used are long enough for the causes to exert their effects but not so long that the effects are no longer present. However, no researcher can at present be certain that this is the case.

In this study, employee perceptions of the work situation (measures of specific work conditions and overall satisfaction) appeared to have an indirect causal impact on financial outcomes, mediated by customer loyalty and employee retention. However, we also found a direct effect of employee perceptions on financial outcomes. This direct effect is likely due to underrepresentation of mediating variables. That is, it is possible that if all mediating variables (absenteeism, accidents, etc.) were included, there would be no remaining apparent direct effect of employee perceptions on financial outcomes; all effects of employee perceptions would be indirect, through mediating variables. It is also possible that additional lags in the performance variables (e.g., from customer loyalty to financial performance) would further change the path coefficients. Past research has indicated nontrivial time lags from customer satisfaction and loyalty to financial outcomes (Fleming, 2000). Finally, we encourage other methods of determining causality be explored, such as experimental designs. Assessment of causality should be examined from many perspectives, and this article presents just one possible approach.

### **Conclusion**

Results of this study provide support for the proposition that employee perceptions of work cause future organizational outcomes such as employee retention, customer loyalty, and financial performance. Specific workplace conditions such as role clarity, feeling appreciated, coworker relationships, and opportunities to learn appear to be causal antecedents of various organizational performance outcomes. One implication is that changes in management practices that improve employee perceptions of specific work situation variables will increase business-unit outcomes, including financial outcomes. For instance, managers can work to clarify expectations for employees by helping employees see the ultimate outcomes the organization is working to achieve and how they play a role in achieving those outcomes. Managers can also provide individualized training and development that leverage the talents of employees, while providing timely and relevant feedback when employees achieve important outcomes. Further, they can influence the extent to which employees respect one another

by selecting conscientious employees, providing common goals and metrics to assess quality, and providing opportunities for employees to interact with one another (Wagner & Harter, 2006).

Our findings have important implications for managers and their organizations. Improving employee work perceptions can improve business competitiveness while positively impacting the well-being of the employees. A recent study examined momentary experiences and cortisol for weekdays and weekends and found employees in more engaging workplaces (i.e., those that score higher on the 12 work conditions that are the focus of this article) experience more happiness and interest and lower stress and sadness at work when compared with those in disengaging workplaces (Harter & Stone, 2009).

Our findings also indicate that improving financial performance appears to increase general satisfaction and some specific work perceptions. We expect that in most healthy business units, a partial reciprocal relationship exists, in which positive attitudes fuel better performance and better performance fuels better attitudes.

We found a great deal of consistency in the direction and magnitude of causal paths across the specific work perceptions tested. Recent findings from Harrison, Newman, and Roth (2006) suggest a general attitude–performance construct, referred to as *engagement*. Additionally, Le, Schmidt, and Putka (2009) along with Harrison et al. (2006) suggested there is a great deal of construct redundancy among measures of supposedly distinct work attitudes. If this finding of redundancy is supported in future studies, the findings from this study will generalize even more widely. The result may be an important increase in the scientific parsimony of many theories in organizational behavior.

### Declaration of Conflicting Interests

Frank L. Schmidt is also a Gallup Senior Scientist and serves as a consultant to Gallup, Inc.

## Appendix

### Gallup Q12 Instrument

Overall satisfaction: On a 5-point scale, where 5 = *extremely satisfied* and 1 = *extremely dissatisfied*, how satisfied are you with your organization as a place to work?

Engagement items: On a 5-point scale, where 1 = *strongly disagree* and 5 = *strongly agree*, please indicate your level of agreement or disagreement with each of the following items.

- Q01. I know what is expected of me at work.
- Q02. I have the materials and equipment I need to do my work right.
- Q03. At work, I have the opportunity to do what I do best every day.

- Q04. In the last seven days, I have received recognition or praise for doing good work.
- Q05. My supervisor, or someone at work, seems to care about me as a person.
- Q06. There is someone at work who encourages my development.
- Q07. At work, my opinions seem to count.
- Q08. The mission or purpose of my company makes me feel my job is important.
- Q09. My associates or fellow employees are committed to doing quality work.
- Q10. I have a best friend at work.
- Q11. In the last six months, someone at work has talked to me about my progress.
- Q12. This last year, I have had opportunities at work to learn and grow.

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